**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

WSOU INVESTMENTS, LLC d/b/a BRAZOS LICENSING AND DEVELOPMENT, Plaintiff, v. DELL TECHNOLOGIES INC., DELL INC., EMC CORPORATION, AND VMWARE, INC., Defendants.	Case No. 6:20-cv-00480-ADA Case No. 6:20-cv-00481-ADA Case No. 6:20-cv-00485-ADA Case No. 6:20-cv-00486-ADA **JURY TRIAL DEMANDED**

**DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF
REGARDING U.S. PATENT NOS. 7,092,360; 7,539,133; 7,636,309; AND 9,164,800**

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I.   INTRODUCTION

From WSOU's 111 asserted claims across four patents, 15 terms are presented for construction. Nine lack an accepted definition in the art. The intrinsic record, however, either expressly defines these terms (which Defendants adopt verbatim) or clearly mandates Defendants' constructions. The remaining six invoke 35 U.S.C. § 112, ¶ 6, and thus must be construed under that framework. In response, WSOU offers nothing more than conclusory, non-responsive, or false assertions, including arguments that the Federal Circuit has rejected as a matter of law.

II.   U.S. Patent No. 7,092,360 (Case No. -486)

The '360 patent relates to monitoring whether a scheduler is functioning properly. '360 patent, 1:8–9, 6:22–25; 6:45–52. This is depicted in Figure 1 (annotated), with the traffic generator (3) generating "test cells" that are passed to a scheduler (11), and a monitor (7) checking the status of the scheduler to determine if it is working properly (*id.* at 4:10–40):
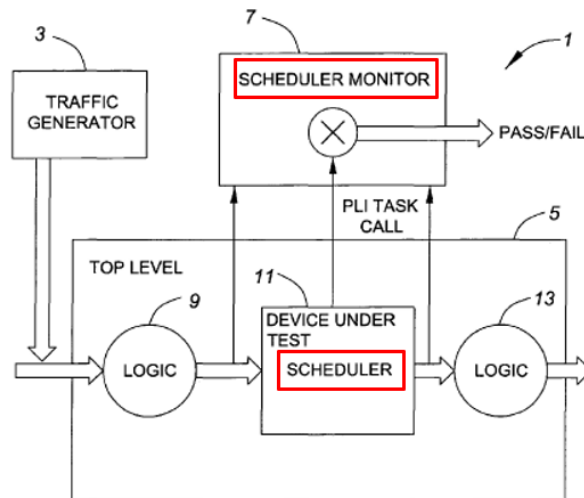
FIG. 1

The scheduler "determin[es] the order of queues from which data cells" are to be "transmi[tted] onto [a] network." *Id.* at 1:26–29. The scheduler can be implemented either "in hardware" or "as a software model, before synthesis to silicon." *Id.* at 1:33–36. The scheduler has "elements" or "parameters" that are monitored to ensure the scheduler is "functioning

properly." *Id.* at 6:22–25. These elements are monitored by comparing their "expected" states

against their "monitored" states; if those states do not match, the scheduler is not "operating

correctly." *Id.* at 6:52–61; *see also id.* at 2:48–64. For example, one scheduler element ("counter")

may indicate the number of items in a particular queue, while another scheduler element ("queue

status") may indicate if the queue is empty or occupied. *Id.* at 8:1–13, 8:18–23; Fig. 3A. If a

queue counter is zero, the queue status should read empty (*i.e.*, zero); but if the queue counter is

non-zero (*i.e.*, 5), the queue status should read occupied (*i.e.*, one). *Id.* at 9:55–10:1. If those

values do not match their expected states, the scheduler is not operating correctly. *Id.* at 10:5–10.

> A.   **"said element comprises: an element for recording whether a queue is empty
> or occupied, an element for recording the [number of data cells/quantity of
> data] contained in a queue, an element identifying a queue from which data is
> to be output, and an element identifying a group of queues from which data is
> to be output" (Claims 1 and 26)**

Defendants' Proposal	WSOU's Proposal
"said element includes *all of*: an element for recording whether a queue is empty or occupied, an element for recording the quantity of data contained in a queue, an element identifying a queue from which data is to be output, and an element identifying a group of queues from which data is to be output"	Plain and ordinary meaning

The plain language of claims 1 and 26 requires that "said element *comprises*"—*i.e.*,

includes—*all of* the four named elements that follow. [1] Despite refusing to agree to this

fundamental concept during meet and confers, WSOU now appears to agree—as it must. [2] Br. 1.

Indeed, WSOU does not appear to dispute Defendants' construction of the claim 26 term at all.

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[1] Unless otherwise noted, emphasis has been added to quotes included in this brief.

[2] Any contrary construction is precluded by the prosecution history, in which the applicants explicitly amended these two claims—as the examiner proposed to permit allowance—from originally requiring "any one" of the claimed elements to instead requiring *all four* of the enumerated elements. *Compare* Ex. 1 (12/28/01 App.) at 34, *with* Ex. 2 (5/18/06 Am.) at 2, 9; Ex. 3 (6/5/06 Claim Index) at 7–9; Ex. 3 (6/5/06 Interview Summary) at 5–6; Ex. 3 (6/5/06 Notice of Allowability) at 1. *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995).

Instead, WSOU objects only to Defendants' use of the term "quantity of data" for claim 1, as claim 26 recites "the number of data cells" rather than "quantity of data." *Id.* Putting aside that WSOU never raised this issue during meet and confers, it is a non-issue. It is well settled that "claims with different terminology can define the exact same subject matter." *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006). WSOU fails to explain how "number of data cells" is meaningfully different from "quantity of data." In any event, Defendants do not object to a construction that reflects the specific language of each claim, *i.e.*, that "said element" includes **all of** the explicitly recited elements that follow.

B.   **"expected state for said element"; "predetermined state for said element"; "expected value of said parameter"; "expected states for that element"; "expected status for said element"; "expected state of said first element" (Claims 1, 3, 12, 13, 18, 21, 24, 26, 28, 29, 48, and 49)[3]**

Defendants' Proposal	WSOU's Proposal
"a [state/value] for the [element/parameter] that would be expected if the scheduler is functioning properly"	Plain and ordinary meaning

The intrinsic record makes clear that "expected state for said element," and variants of the term, refers to the state of the element that would be expected if the scheduler is "functioning properly." The claims do not provide any context or otherwise clarify what it means for a state to be "expected" or "predicted." For example, the claims do not explain by whom a state would be expected or predicted, and for what purpose. Even WSOU agrees that the claims are "agnostic" on these points. Br. 3. Thus, because the "claim language is not clear on its face, . . . our

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[3] WSOU argues for the first time that "Dell improperly groups together each of these" terms for counting purposes. Br. 2. WSOU's objection is not well taken. Defendants proposed these related terms as a single term throughout the meet-and-confer process, from the Jan. 6, 2021 Preliminary Identification through their Feb. 8, 2021 Identification of Narrowed Proposed Terms. Ex. 4; Ex. 5; Ex. 6. **WSOU itself** treated these terms as one term in its Feb. 1, 2021 "Claim Construction Summaries" spreadsheet submitted to the Court, Ex. 7 at 2. WSOU never objected to this treatment until its opening brief. Br. 2 n.1.

consideration of the rest of the intrinsic evidence is directed to resolving . . . th[is] lack of clarity."
Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001).

Here, the patent's ***entire disclosure***, and purpose, is centered on determining if a scheduler is "functioning properly" by examining the state of scheduler elements and comparing the state against what would be expected if the scheduler were operating correctly. *Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1377 (Fed. Cir. 2017). The patent states:

> [T]he scheduler monitor 107 is arranged to receive information concerning the ***status*** and/or operation of certain elements of the scheduler 111 from which it may determine whether a particular element is ***functioning properly***. In one embodiment, the monitor 107 may be arranged to monitor the status of two scheduler elements where a particular status for one element can be ***predicted*** from the status of another element, or vice versa, if the elements are ***functioning correctly***. On the other hand, if an element adopts a status different from the ***expected*** status based on the status of the other element, a determination can be made that either one or the other of the elements is not ***functioning correctly***.

'360 patent, 6:22–33; *id.* at 9:34–39 ("A register bit of 1 indicates that at this particular instant of time, the current pointer and queue status register is ***functioning properly***."), 6:52–58 ("the scheduler monitor 107 may receive information concerning the ***status*** of one element at one time and information concerning the ***status*** of another element at a different time and compare/check the detected ***status*** of the two elements with the ***status expected*** for the elements if the ***scheduler is operating correctly***"), 11:56–58 ("If the two sequences match, it may be determined that the ***scheduler is operating correctly***."). The Abstract states that the monitor is for "determining whether the ***scheduler is operating as intended*** based on the detected state of the internal element."

WSOU argues that the claims cannot be limited to a single embodiment. Br. 3 n.2. Defendants do not rely on merely a single embodiment. Instead, the specification "***repeatedly***, ***consistently***, and ***exclusively***" discusses the "expected state" as one that would be expected if the scheduler were functioning properly, and therefore compels Defendants' construction of the otherwise unclear claim language. *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295,

1303 (Fed. Cir. 2004). WSOU does not and cannot point to any contrary disclosure because the *only* relevant disclosure in the '360 patent is what Defendants describe above. WSOU furthermore argues that the different claims cannot be construed the same way because some recite an "expected" state while others recite a "predetermined" state. Br. 3. But "claims with different terminology ***can define the exact same subject matter***." *Curtiss-Wright*, 438 F.3d at 1380. WSOU fails to explain how "expected" and "predetermined" are meaningfully different. Br. 2–3. In any event, the critical aspect of Defendants' construction is that the expected or predicted value is the value that would be expected or predicted if the scheduler were functioning properly.

WSOU also contends that Defendants' construction would render "superfluous" the "parameter" limitation in claim 3 because the construction of "expected state" "necessitates that the parameter relate to 'the scheduler . . . functioning properly.'" Br. 3. WSOU's contention makes no sense. Claim 3 recites "monitoring a ***parameter relating to the operation of said scheduler***, and determining means for determining an ***expected state for said element*** based on said monitored parameter." The "expected state for said element" in claim 3 refers to the "element" in claim 1; "expected state" has nothing to do with, and has no effect on, the separately claimed "parameter," and therefore does not render the "parameter" limitation superfluous.

Thus, "expected state for said element," and variations thereof, should be construed to mean the state of the element "that would be expected if the scheduler is functioning properly."

C.   "computer generated model" (Claims 1, 18, 21, 26, 44, and 45)

Defendants' Proposal	WSOU's Proposal
"a simulated computer model of circuitry describing a scheduler"	Plain and ordinary meaning

The claims recite that the "scheduler comprises a computer generated model," but do not specify ***what the model represents***. In other words, the claims do not answer the following

question: a model of what? Because the "claim language is not clear on its face," the specification

must be analyzed to "resolv[e], if possible, th[is] lack of clarity," and the cases on which WSOU

relies do not apply. *Interactive Gift*, 256 F.3d at 1331; Br. 4.

WSOU argues that this term encompasses any "model generated by a computer," even one

unrelated to the recited "scheduler." Br. 3. But the specification consistently refers to the model

as representing the circuitry of a ***hardware scheduler***. From the very beginning of the

specification, the patent states that the scheduler—to which the claimed invention applies—"is

implemented in hardware, for example, on an application specific integrated circuit." '360 patent,

1:29–32. But the specification also makes clear that one can test such a scheduler "either when

implemented as a ***software model, before synthesis to silicon***, or when implemented in hardware."

Id. at 1:33–36; *see also id.* at 1:56–59, 6:22–33. In other words, the patent contemplates only ***two***

options: a hardware scheduler, or a software model of such a hardware scheduler.

With that framework, the patent repeatedly and consistently describes the scheduler as

being implemented either in hardware or in a software model of such hardware. For example, the

patent states that "the scheduler may be implemented as a ***simulated computer model of circuitry***

describing a scheduler, and may for example be described using RTL[4] code." '360 patent, 12:11–

14. It similarly states that "[i]n testing the performance of a ***simulated circuit***, a stimulus, for

example, a test signal is applied to the input of the ***model*** and the response of the ***model*** is

monitored and verified by monitoring output signals from the device." *Id.* at 2:9–12; *see also id.*

at 12:53–56 ("[T]he scheduler may be implemented and tested as a ***computer model*** using a

language which enables the tested scheduler to be ***synthesized in hardware***."); 12:53–56 ("In one

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[4]   Register transfer level (RTL) code "specif[ies] the characteristics of a circuit or system by
operations and the transfer of data between . . . registers." Ex. 11 (Verilog HDL Design) at 300;
see also Ex. 12 (RTL (Register Transfer Level)).

embodiment of the present invention, the ***scheduler may be implemented and tested as a computer model*** using a language which enables the tested scheduler to be synthesized in hardware."); *Id.* at 12:61–63 ("Although a ***computer model of a scheduler*** is preferred for performance testing, in another embodiment, the schedule [sic] may be implemented in hardware . . . ."). Thus, the specification "repeatedly, consistently, and exclusively" explains that the "computer generated model" is "a simulated computer model of circuitry describing a scheduler." *Irdeto*, 383 F.3d at 1303.

WSOU contends that the specification's use of "may" precludes a construction based on this clear disclosure, arguing that "the scheduler is *not necessarily* implemented as a similar computer model of circuitry describing a scheduler." Br. 4. This argument is irrelevant. It certainly is true that the scheduler need not be implemented by a software model of hardware; as shown above, it could instead be implemented ***directly in hardware***, which is how the specification begins. '360 patent, 1:29–32. But, as shown above, the specification unambiguously states that if the scheduler is not implemented in hardware, it is implemented in a computer model of such hardware. Claims 24 and 25 do not require a "model," and thus may be satisfied by ***either*** a hardware scheduler or a computer model of such hardware. The remaining claims, however, explicitly recite that the "scheduler comprises a computer generated model," and thus should be construed to require a "simulated computer model of circuitry describing a scheduler." *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008) (recognizing that "different claims" can be "directed to and cover different disclosed embodiments").

D.   "means for . . ." terms

There are thirteen terms in the '360 patent that use the phrase "means for," yet incredibly WSOU argues that ***none*** of those terms should be construed according to Section 112, ¶ 6. Br. 4–11. "The use of the term 'means' triggers a rebuttable presumption that § 112 ¶ 6 governs the

construction of the term." *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1097 (Fed. Cir. 2014). If the term specifies a function, this presumption can be overcome ***only if*** the applicant demonstrates that the claim "goes on to elaborate sufficient structure . . . ***within the claim itself*** to perform ***entirely the recited function***." *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427–28 (Fed. Cir. 1997). If the presumption is not overcome, the term "will be limited" to the "corresponding structure . . . described in the specification." *Robert Bosch*, 769 F.3d at 1097. That corresponding structure "must include ***all structure*** that ***actually*** performs the recited function." *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). If there is no such structure, the term is indefinite. *Robert Bosch*, 769 F.3d at 1097.

Due to term limits for claim construction, Defendants brief three "means for" terms below. As discussed, each should be construed according to Section 112, ¶ 6.

1.   **"detection means for detecting a state of an element"[5] (Claims 1 and 18)**

Defendants' Proposal	WSOU's Proposal
This term is subject to 35 U.S.C. § 112, ¶ 6. **Function:** detecting a state of an element[6] **Structure:** modules 110, 112, 114 . . . to 130 using a programming language interface (PLI) as described in '360 patent, 12:11–41	No construction required apart from finding this term is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then, **Function**: detecting a state of an element of said scheduler; **Structure**: monitor having the claimed functionality.

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[5] Defendants briefed this term as representative of the following terms that are materially the same: "means for requesting said scheduler model to pass the status of said element to said monitor" (claim 1); "monitoring means for monitoring a parameter relating to the operation of said scheduler" (claim 3); and "means for detecting the state of at least one element of said scheduler whose state depends on which queue is selected by said scheduler for outputting a test cell" (claim 24). The analysis in this section applies equally to these unelected terms.

[6] The parties' identifications of function are materially the same for purposes of this analysis. Defendants do not object to WSOU's proposed function identification; nor does its inclusion change the corresponding structure.

Section 112, ¶ 6 Applies.   WSOU cannot overcome the presumption that Section 112, ¶ 6

applies, because WSOU fails to identify any structure *in the claims* that "perform[s] entirely the

recited function[s]."   *Sage Prods.*, 126 F.3d at 1427–28.   WSOU argues that the claimed

"monitor"—which, as shown below, *itself* includes each of the recited "means"—performs the

recited function, and thus overcomes the presumption (Br. 4–5):

> "1. A *monitor* for monitoring the operation of a scheduler . . . *comprising detection means for* detecting a state of an element of said scheduler, *comparing means for* comparing the detected state with a predetermined state for said element and for outputting the result of the comparison."   *See, e.g.*, '360 patent, cl. 1.

> "18. A *monitor* for monitoring the operation of a scheduler . . . *comprising* . . . *determining means for* determining an expected value of said parameter based on the detected state of said element . . . ."   *Id.*, cl. 18.

The Federal Circuit has squarely rejected this very argument, where a patentee attempted

to rely on a claimed apparatus that *itself included* the "means," rather than identify in the claim a

"component" of the apparatus that performed the recited function.   *Net MoneyIN, Inc. v. VeriSign,*

Inc., 545 F.3d 1359, 1366 (Fed. Cir. 2008).   In *VeriSign*, the claim recited a "*first bank computer*

including *means* for generating an authorization indicia."   *Id.* at 1364.   The court rejected the

argument that the "first bank computer" provided the requisite structure for "generating means,"

holding that the "bank computer is *not linked* in the claim as the 'means' for generating an

authorization indicia.   *Rather, the bank computer is recited as 'including'* those means."   *Id.* at

1366.   The patentee's argument was "both *redundant and illogical*," as it "require[d] the first bank

computer to include a first bank computer."   *Id.*   "Because the claimed generating *means* [was] a

subset of the bank computer, there *must be a recitation of structure that is a component of the*

bank computer to rebut the presumption."   *Id.*   Since the claim "contain[ed] no such recitation" of

a component that performed the recited "generating" function, Section 112, ¶ 6 applied.   *Id.*

Like the "bank computer" in *VeriSign*, the "monitor" here is "not linked in the claim[s] as

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the 'means' for" any of the recited functions associated with the "means" terms discussed below.
545 F.3d at 1366. Instead, the "monitor" *itself* includes the claimed "means." *Id.* Thus, as in
VeriSign, WSOU's argument is "redundant and illogical" because it would require the "monitor"
to include a "monitor" to perform these recited functions. *Id.* As the Federal Circuit made clear
in *VeriSign*, because the "means" terms in these '360 patent claims are each a "subset of the"
"monitor," there "must be a recitation of structure that is a *component of* the" monitor "to rebut
the presumption" that Section 112, ¶ 6 applies. *Id.* Because the claims recite no component of the
"monitor" that performs the recited functions, WSOU cannot overcome the presumption.

WSOU relies heavily on its unsworn, unsupported, and false assertion that "Dell admitted
through counsel (during a . . . meet and confer) that the specification discloses a 'monitor' as" the
corresponding structure. Br. 7. Such "unsworn attorney argument . . . is not evidence." *Gemtron
Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009). In any event, Defendants'
counsel explicitly stated on the meet-and-confer call that they did *not* agree that "monitor" is
corresponding structure.[7]

Finally, WSOU's argument is the *opposite* of what it argues with respect to U.S. Patent
No. 7,212,536 (Case No. 6:20-cv-474). Claim 12 of the '536 patent recites "[a] *bridge* . . ., the
bridge comprising . . . *means for* reading priorities . . . ." There, WSOU argues that Section 112,
¶ 6 *does* apply to the "means" term, even though it is included within a claim limitation reciting
the "bridge." No. 6:20-cv-474, D.I. 82 at 7–9. For the reasons explained in this section, WSOU's
contrary position on the '360 patent is wrong and should be rejected.

Corresponding Structure. The *only* disclosure of structure that performs the recited

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[7] Rosenthal Decl. ¶¶ 2–6. WSOU should correct this false statement. *See* Local Rule AT-4(c),
Appendix M (Section IV(6)); ABA Model Rule 3.3(a)(1). As a result of WSOU's
misrepresentation, Defendants reserve the right to record all future meet-and-confer calls.

function of "detecting a state of an element of said scheduler" is modules 110, 112, 114 . . . to 130

using a programming language interface (PLI) as described in the '360 patent at 12:11–41. For

instance, the specification states that "[r]eferring to FIG. 2, the embodiment of the scheduler

monitor includes a plurality of *modules 110, 112, 114 . . . to 130*, adapted to *receive information*

relating to the operation of the scheduler under test, for example, the *state of internal elements of*

the scheduler and parameters relating to operation of the scheduler." '360 patent, 6:62–7:28. The

patent likewise states that the "scheduler monitor may be implemented using any suitable program

language and the monitor system may include a *program language interface (PLI)*[8] to enable the

monitor *to detect the status and/or operations associated with elements of the scheduler*

module. . . . The PLI may be instructed to *retrieve information* concerning the *status of one or*

more elements of the simulated scheduler by calling a file defining the PLI tasks." *Id.* at 12:11–

41. Finally, Figure 1, which is "a schematic diagram of an embodiment of the present invention,"

depicts a "*PLI* Task Call" between the scheduler (11) and the monitor (7). *Id.* at 3:61–62.

WSOU's "position" that the structure is "monitor having the claimed functionality"—

without identifying any specification support—is deficient as a matter of law. There is no

precedent permitting such a generic statement of a device "having the claimed functionality" as

somehow satisfying the corresponding structure requirement. Instead, it is well established that

"[s]tructure disclosed in the specification is 'corresponding' *only if* the specification or prosecution

history *clearly links or associates that structure to the function* recited in the claim." *Medtronic,*

Inc. v. Advanced Cardiovascular Sys., Inc., 248 F.3d 1303, 1311 (Fed. Cir. 2001); *Rain*

Computing, Inc. v. Samsung Elecs. Am., Inc., --- F.3d ---, 2021 WL 786361, at *3 (Fed. Cir. 2021).

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[8] Programming language interface, or "PLI, provides a means for Verilog HDL [hardware description language] users to access and modify data in an instantiated Verilog data structure dynamically." Ex. 13 (Programming Language Interface (PLI) Overview) at 366.

WSOU *agrees* in its brief that modules 110, 112, 114 . . . to 130, and the PLI, are corresponding structure. Br. 7. But WSOU also incorrectly identifies "monitors 7 and 107," "rules 134," and "a rule checker" as possible structure. *Id.* None of WSOU's specification cites, however, "*clearly links*" those structures to "*actually perform[ing]* the recited function." *Medtronic*, 248 F.3d at 1311; *Default Proof*, 412 F.3d at 1298. There is nothing in the specification that states that the "monitor" (including for the reasons discussed above, *supra*, p. 9–10), the "rules," or the "rule checker" "actually perform" the function of detecting the state of an element. Instead, the *only* thing in the specification that actually performs that function is the modules, using a PLI. WSOU argues that the PLI is not required merely because the specification uses the word "may" in connection with the PLI. Br. 8. But WSOU identifies no disclosed structure that is "clearly linked" to the recited function *without* the PLI. Finally, WSOU argues that Defendants seek to "unduly restrict the corresponding structure to a particular embodiment." Br. 8. But that is precisely what Section 112, ¶ 6 requires: "means-plus-function elements . . . are *statutorily limited* to the 'corresponding structure'" clearly linked in the specification to performing the recited function. *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008).

2. "comparing means for comparing the detected state with a predetermined state for said element and for outputting the result of the comparison"[9] (Claims 1 and 24)

Defendants' Proposal	WSOU's Proposal
This term is subject to 35 U.S.C.	No construction required apart from finding this term

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[9] Claim 24 recites materially the same limitation as claim 1: "a monitor having . . . comparison means for at least one of: comparing the detected element status with an expected status for said element based on the detected queue identity and comparing the detected queue identity with an expected queue identity based on the detected status of said element." The analysis in this section thus applies equally to: "comparison means for comparing the detected parameter with said expected parameter and for outputting the result of the comparison" (claim 18); and "means for detecting the state of an element of said scheduler at a plurality of different times and comparing the detected states with expected states and outputting the result of said comparison" (claim 21). The analysis in this section applies equally to these other terms. *Supra*, n.5.

| § 112, ¶ 6.

Function: comparing the detected state with a predetermined state for said element and for outputting the result of the comparison

Structure: Indefinite | is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then,

Function: comparing the detected state with a predetermined state for said element and for outputting the result of the comparison;

Structure: monitor having the claimed functionality. |

Section 112, ¶ 6 Applies. As discussed above (*supra*, p. 9–10), WSOU cannot overcome the presumption that Section 112, ¶ 6 applies because the "claim itself" lacks any structure "to perform entirely the recited" "comparing" function. The claimed "monitor" cannot provide sufficient structure for the "comparing means" that the "monitor" itself includes. And because the claims recite no component of the "monitor" that performs the "comparing" function, WSOU cannot overcome the Section 112, ¶ 6 presumption. *Supra, id.*

No Corresponding Structure. The specification lacks any structure that performs the recited function. Indeed, in every instance that the specification refers to the recited function, *no* corresponding structure is identified. Instead, the specification just refers to the function generally or a generic "means" to perform the function. '360 patent, 2:39–41, 2:52–54, 2:62–64, 3:10–11, 3:32–34, 3:42–44. Thus, this "means" term is indefinite. *Robert Bosch*, 769, F.3d at 1099–1100 (holding disclosure that "merely explain[s the] function" is insufficient for the required structure).

WSOU's position that the structure is "monitor having the claimed functionality" is legally deficient, for the reasons stated above. *Supra*, p. 11. In particular, it is nonsensical and contrary to established Federal Circuit law to construe the means, which must be included within the monitor, to *itself be* the monitor. In addition, none of what WSOU cites as specification support "*clearly links* . . . th[ese] structure[s]" to "*actually perform[ing]* the recited function." *Medtronic*, 248 F.3d at 1311; *Default Proof*, 412 F.3d at 1298.

3. "determining means for determining an expected value of said parameter"[10] (Claim 18)

Defendants' Proposal	WSOU's Proposal
This term is subject to 35 U.S.C. § 112, ¶ 6.	No construction required apart from finding this term is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then,
Function: determining an expected value of said parameter[11]	**Function**: determining an expected value of said parameter based on the detected state of said element.
Structure: Indefinite	**Structure**: monitor having the claimed functionality.

Section 112, ¶ 6 Applies. As discussed above (*supra*, p. 9–10), WSOU cannot overcome the presumption that Section 112, ¶ 6 applies because the "claim itself" is devoid of any structure "to perform entirely the recited" function of "determining an expected value of said element." The claimed "monitor" cannot provide sufficient structure for the "determining means" that the "monitor" itself includes. And because the claims recite no component of the "monitor" that performs the "determining" function, WSOU cannot overcome the presumption. *Supra*, *id.*

No Corresponding Structure. The patent lacks any corresponding structure that performs the recited "determining" function. In every single instance that the specification refers to this function, it merely refers to the function or a generic "means" to perform it. '360 patent, 2:60–62, 3:41–42. Thus, this "means" term is indefinite. *Robert Bosch*, 769, F.3d at 1099–1102 (holding disclosure that "merely explain[ed the] function" to be insufficient for the required structure).

WSOU's position that the structure is "monitor having the claimed functionality" is deficient as a matter of law. *Supra*, p. 11. In particular, it is nonsensical and contrary to established

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[10] This term is representative of the following terms: "determining means for determining an expected state for said element based on said monitored parameter" (claim 3) and "prediction means for determining an expected [status/state] [for/of] said [first] element" (claims 12 and 13). The analysis in this section applies equally to these other terms. *Supra*, n.5.

[11] The parties' function identifications are materially the same for purposes of this analysis. Defendants do not object to WSOU's proposed function identification.

Federal Circuit law to construe the means, which must be included within the monitor, to ***itself be***

the monitor.   And none of WSOU's cites "***clearly links*** . . . th[ese] structure[s]" to "***actually***

perform[ing] the recited function." *Medtronic*, 248 F.3d at 1311; *Default Proof*, 412 F.3d at 1298.

Indeed, there is no discussion whatsoever in the specification of the recited determining function

that identifies or even suggests what performs it.

E.   "element . . ." or "element for . . ." terms[12]

Section 112, ¶ 6 Applies. "Generic terms like . . . 'element' . . . are commonly used as

verbal constructs that operate, like 'means,' to claim a particular function rather than describe a

'sufficiently definite structure.'" *MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019)

(quoting *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015)).   Thus, because

"nonce words" like "element" "typically do not connote sufficiently definite structure," Section

112, ¶ 6 applies if a claim recites "element" followed by functional language, "without reciting

sufficient structure for performing that function." *Williamson*, 792 F.3d at 1349–50.   A "critical

question" in this analysis is "whether 'the claim term is used in common parlance or by persons of

skill in the pertinent art to designate structure,' including either a particular structure or a class of

structures." *MTD Prods.*, 933 F.3d at 1341.   If not, and the patent fails to provide "its own

structural definition of [the] nonce term" by "clearly express[ing] an intent to redefine the term,"

Section 112, ¶ 6 applies. *Id.* at 1342–43.

Applying these principles, courts have held that recitation of the term "element" in a claim,

followed by functional language without sufficient corresponding structure, invokes Section 112,

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[12] Defendants consistently proposed these terms as a single term throughout the meet-and-confer process, from their Jan. 6, 2021 Preliminary Identification through their Feb. 8, 2021 Identification of Narrowed Proposed Terms. Ex. 4; Ex. 5; Ex. 6. WSOU never once communicated an objection to this proposal until its opening brief. Br. 13. In any event, these terms raise very similar issues and should be addressed together.

¶ 6. *E.g.*, *Mas-Hamilton Grp. v. LaGard, Inc.*, 156 F.3d 1206, 1213–14 (Fed. Cir. 1998) ("lever moving element for"); *Fiber, LLC v. Ciena Corp.*, 2017 WL 3896443, at *16–17 (D. Colo. Sept. 6, 2017) ("data gathering and transmission element for"); *Lochner Techs., LLC v. Lenovo (U.S.) Inc.*, 2015 WL 293625, at *15–16 (E.D. Tex. Jan. 21, 2015) ("display element"); *Ethicon LLC v. Intuitive Surgical, Inc.*, 2018 WL 6831169, at *7 (D. Del. Dec. 28, 2018) ("closure element").

Here, the claims recite no structure that performs the recited function. WSOU offers no contrary evidence. WSOU instead argues that Section 112, ¶ 6 cannot apply to these "element for" terms because other claims in the patent "_do_ recite 'means for' limitations." Br. 11 (emphasis in original). This position is nonsensical, since as shown above WSOU is arguing that Section 112, ¶ 6 does not apply even where the patent *does* recite "means for." *Id.* at 4–11. In any event, the recitation of "means" in certain claims does not immunize other claims reciting nonce words like "element" from Section 112, ¶ 6 analysis.

Corresponding Structure. The structure for each "element" is addressed below.

Defendants' Proposal	WSOU's Proposal
"element for recording whether a queue is empty or occupied" (claims 1, 5, 6, 7–9, 14–15, 20, 25, 26, 30, 33–35, and 38) **Function:** recording whether a queue is empty or occupied **Structure:** queue status register 165, 167, 201, or 203	No construction required apart from finding this term is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then, **Function**: recording whether a queue is empty or occupied. **Structure**: scheduler having the claimed functionality.

The specification discloses corresponding structure for the recited function: queue status register 165, 167, 201, or 203. Referring to Figure 2, the patent states that the "scheduler 111 further comprises a first *queue status register 165* for *recording and tracking*, for each queue of the first storage section 117, whether *a particular queue is empty or occupied*, and a *second queue status register 167* for *recording and tracking*, for each queue in the second storage section 119,

whether a particular queue is empty or occupied." '360 patent, 5:4–10. It further states that

"FIG. 3A shows an example of *queue status registers 201, 203* of high and low priority groups of

queues, respectively. *Each register 201, 203* comprises a plurality of 1-bit registers corresponding

to a particular queue, i.e. 0, 1, 2, 3, 4 . . . 10, where a 1 *indicates that a queue is occupied and 0*

indicates that a queue is empty." *Id.* at 8:1–6. Finally, the patent states that "[e]ach of the high

and low priority queue registers indicate with a '1' those queues which are *occupied* and indicate

with a '0' those queues 20 which are *empty*." *Id.* at 8:18–21; *see also id.* at 9:27–11:60.

WSOU's position, that the structure is "scheduler *having the claimed functionality*," is

deficient as a matter of settled Federal Circuit law. *Supra*, p. 11. In particular, the claimed

"element" that is part of the claimed "scheduler" cannot *itself* be construed to be a scheduler. *Id.*

In any event, WSOU then seems to agree that queue status register 165, 167, 201, or 203 is

corresponding structure. Br. 12. But WSOU also identifies the "scheduler" and "buffer selection

unit 175" as other possible structure. *Id.* However, none of what WSOU cites as support "*clearly*

links . . . the[se]" additional "structure[s]" to "*actually perform[ing]* the recited function."

Medtronic, 248 F.3d at 1311; *Default Proof*, 412 F.3d at 1298.

Defendants' Proposal	WSOU's Proposal
"an element for recording the [number of [data] cells/quantity of data] contained in a queue" (claims 1, 5–6, 9, 14–15, 20, 26, 30, 33–35, and 38) **Function:** recording the [quantity of data/number of data cells] contained in a queue **Structure:** counter 169, 205, or 207	No construction required apart from finding this term is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then, **Function**: recording the [quantity of data / number of cells / number of data cells] contained in a queue; **Structure**: scheduler having the claimed functionality.

The specification discloses the corresponding structure for this function: counter 169, 205,

or 207. For instance, as to Figure 2, the patent states that "the scheduler . . . includes a *counter*

169 for each queue of the first and second storage sections 117, 119 for *recording and tracking the number of cells in a queue*. For example, the counter may comprise an eight bit counter capable of recording up to 256 cells in each buffer." '360 patent, 5:14–19. It also states that "[e]ach high priority queue has an associated *counter* which records and tracks the number of data cells in a high priority queue. Similarly, each low priority queue has an associated *counter which records and tracks the number of data cells* in a low priority queue." *Id.* at 8:9–13. Finally, it states that, as to Figure 3A, "the high and low priority *counters 205, 207 indicate the number of data cells present in each queue*." *Id.* at 8:21–23; *see also id.* at 9:27–11:60.

WSOU's position that the structure is "scheduler *having the claimed functionality*" is deficient as a matter of settled Federal Circuit law. *Supra*, p. 11. WSOU then agrees in its brief that "one or [more] counters" is corresponding structure, and relies on the same disclosure discussed above. Br. 14.

Defendants' Proposal	WSOU's Proposal
"an element identifying a queue from which data is to be output" (claims 1, 26, 5, 20, and 30)	No construction required apart from finding this term is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then,
Function: identifying a queue from which data is to be output	**Function**: identifying a queue from which data is to be output
Structure: pointer 177, 179, 181, 183, 209, 211, 213, or 215	**Structure**: scheduler having the claimed functionality.

The specification discloses the corresponding structure for this function: pointer 177, 179, 181, 183, 209, 211, 213, or 215. For instance, referring to Figure 3A, the specification states that "[e]ach of the high and low priority status registers has an associated current *pointer 209, 211* which *indicates the queue from which a data cell is to be read out*, and a respective next *pointer 213, 215* which *indicates the next queue* of each of the high and low priority queues from which a *cell is to be read out* after the cell has been read from the queue indicated by the current *pointer*

209, 211.” '360 patent, 8:23–29; *see also id.* at 9:27–11:60. Furthermore, it describes a "first and

second group of input buffers," where a "current ***pointer*** for each group identifies the ***input buffer***

selected for data readout, and the next ***pointer*** for each group identifies the ***input buffer*** in each

group ***from which a data cell is to be read*** following readout from the queue selected by the current

pointer." *Id.* at 5:55–61. Referring to Figure 2, the specification states that "current ***pointer 177***

associated with the first group of buffers points to the first occupied buffer, . . . and the next ***pointer***

179 of the first buffer group points to the next occupied buffer." *Id.* at 6:1–5. It also states that

"the current ***pointer 181*** of the second group of buffers points to the first occupied buffer, . . . and

the next ***pointer 183*** of the second group points to the next occupied buffer." *Id.* at 6:5–8.

WSOU's position that the structure is "scheduler *having the claimed functionality*" is

deficient as a matter of settled Federal Circuit law. *Supra*, p. 11. WSOU then agrees in the body

of its brief that "one or more pointers" is corresponding structure. Br. 15.

Defendants' Proposal	WSOU's Proposal
"an element [identifying/indicating] a group of queues from which data is to be output" (claims 1, 5, 9, 14–15, 20, 26, 30, 33, 35, and 38) **Function:** [identifying/indicating] a group of queues, from which data is to be output[13] **Structure:** Indefinite	No construction required apart from finding this term is not subject to 35 U.S.C. § 112, ¶ 6. Alternatively, if deemed subject to 35 U.S.C. § 112, ¶ 6, then, **Function**: identifying a queue from which data is to be output **Structure**: scheduler having the claimed functionality.

The specification lacks ***any*** disclosure "clearly linking" any structure to performing this

particular function. As detailed above, the patent discloses structure only for identifying a ***single***

queue "from which data is to be output." '360 patent, 8:23–29 ("[e]ach of the high and low priority

status registers has an associated current pointer 209, 211 which indicates the ***queue*** from which

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[13] Defendants have conformed their proposed function to match the claim language.

a data cell is to be read out, and a respective next pointer 213, 215 which indicates the next *queue*

of each of the high and low priority queues from which a cell is to be read out after the cell has

been read from the *queue* indicated by the current pointer 209, 211"), 6:1–5 ("the current pointer

177 . . . points to the first *occupied buffer*, . . . and the next pointer 179 . . . points to the next

occupied buffer"), 6:5–8 ("the current pointer 181 . . . points to the first *occupied buffer* . . . and

the next pointer 183 . . . points to the next *occupied buffer*"). Nothing in the patent "clearly links"

any structure with the recited function of identifying *more than* a single queue (*e.g.*, a *group* of

queues) "from which data is to be output." Thus, this "means" term is indefinite.

WSOU's position that the structure is "scheduler *having the claimed functionality*" is

deficient as a matter of settled Federal Circuit law. *Supra*, p. 11. WSOU then lists "queue status

register," "priority selectors," "counters," and "current and next pointers" as possible structure.

Br. 16. But none of what WSOU cites "clearly links . . . th[ese] structure[s]" to "actually

perform[ing] the recited function." *Medtronic*, 248 F.3d at 1311; *Default Proof*, 412 F.3d at 1298.

In fact, the disclosure makes no reference to a "group of queues" at all.

III.   U.S. Patent No. 7,539,133 (Case No. -480)

The '133 patent relates to "preventing congestion in load-balancing networks." '133 patent,

1:7–9, 1:13–15. For example, Figure 1 (annotated below) depicts a load-balancing network that

includes networks 102 (blue) and nodes 104 (green). *Id.* at 3:22–26. Nodes 104, together with

links 105, "collectively form a load-balancing network." *Id.* at 3:53–56.

FIG. 1
100
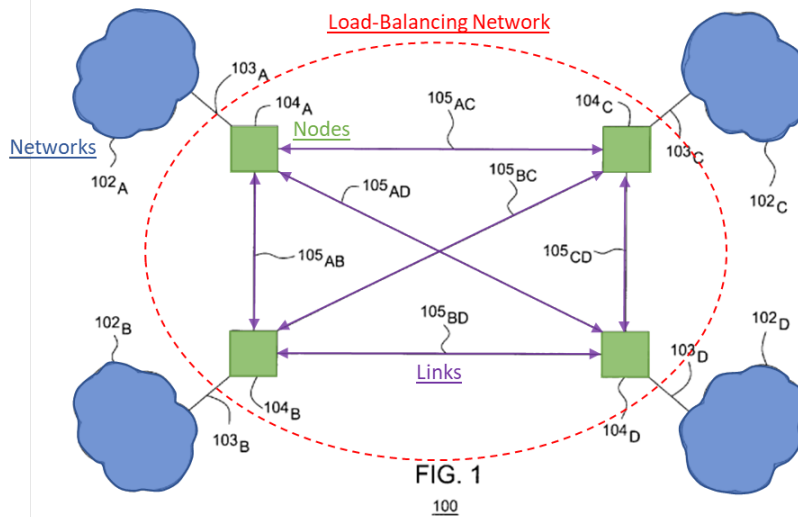
Each node operates as an "ingress node" for traffic entering the load-balancing network from that node's respective network 102 and as an "egress node" for traffic destined for that node's respective network 102. *See id.* at 3:65–4:11. For instance, if traffic comes from the top left network (102_A) destined for the bottom right network (102_D), then node 104_A would be the ingress node, and node 104_D would be the egress node for that traffic. When operating as an ingress node, if node 104_A determines that a packet's egress node (104_D) has a "congestion condition," node 104_A's processor may modify (*i.e.*, lower) the queuing priority for the packet. *Id.* at 5:28–38.

A.   **"whether a congestion condition exists [on/for] the egress node" (Claims 1, 12, and 13)**

Defendants' Proposal	WSOU's Proposal
"whether the egress node is currently congested"	Plain and ordinary meaning

The entire patent centers around taking action at an ingress node if a "congestion condition" exists on an egress node. The patent **explicitly defines** what is meant by that phrase:

> Using the identified egress node associated with the packet, processor 210 **determines the egress node congestion status associated with the identified egress node**. In one embodiment, the egress node congestion status provides an indication as to **whether the egress node currently has a congestion condition (i.e., whether the egress node is currently congested)**.

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'133 patent, 5:17–23.   This passage unambiguously *defines* (via the "i.e.") a "congestion condition" at an egress node to mean "whether the egress node is currently congested." *SkinMedica, Inc. v. Histogen Inc.*, 727 F.3d 1187, 1202 (Fed. Cir. 2013) ("[W]e give the term 'i.e.' here its plain meaning—that it 'signals an intent to define the word to which it refers.'").   The specification uses the term "congestion condition" about *70 more times*, each with exactly the same meaning, and WSOU does not assert otherwise. Br. 17.

WSOU incorrectly urges the Court to ignore the patent's explicit definition merely because it is contained within a description of a preferred embodiment. That is contrary to law. In *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322 (Fed. Cir. 2009), the Federal Circuit rejected that argument, holding instead that "the specification's use of *'i.e.' signals an intent to define* the word to which it refers, 'malleable,' and *that definition was not limited to the embodiment being discussed*." *Id.* at 1334. And as the definition passage above illustrates, the embodiment-specific feature is the use of a "congestion status" that provides an indication of the congestion condition. The definition of "congestion condition" is universal, and is consistent with every use of the term.

Accordingly, this term should be construed based on its express definition. *See, e.g.*, *Advanced Fiber*, 674 F.3d at 1372 ("[I]f the specification or prosecution history defines a claim term, that definition shall apply even if it differs from the term's ordinary meaning.").

B.   "processing the packets" (Claims 1, 12, and 13)

Defendants' Proposal	WSOU's Proposal
"modifying, at the ingress node, the queuing priority of packets destined for the egress node"	Plain and ordinary meaning

The term "processing the packets" should be construed according to the patent's express limitation of the "present invention" as one that modifies, at the ingress node, the queueing priority of packets destined for the egress node. The "Detailed Description of the Invention" begins with three paragraphs that explicitly limit the "present invention," thereby "limit[ing] the scope of the

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invention." *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) ("When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention."); *Pacing Techs., LLC v. Garmin Int'l, Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015) ("We have found disavowal or disclaimer based on clear and unmistakable statements by the patentee that limit the claims, such as 'the present invention includes . . .' or 'the present invention is . . .' or 'all embodiments of the present invention are . . .'"). Specifically, the patent limits the "present invention" to (1) "modif[ying] the queuing priority of packets on ingress nodes" and (2) that modification being a part of "process[ing] the packet" ('133 patent, 2:48–59):

> **[1]** The ***present invention modifies the queuing priority of packets on ingress nodes*** of the load-balancing network by which the packets enter the load-balancing network. **[2]** The ***present invention*** utilizes the egress node information and egress node congestion information associated with each packet for determining whether ***to process the packet for modifying the queuing priority*** of the packet (or for dropping the packet at the ingress node).

The specification also requires that the processed "packets" be "destined for the egress node." *Id.* at 3:7–8 ("The ***present invention*** processes packets ***destined for congested egress nodes***."). The rest of the specification is consistent with these express statements of the "present invention." For instance, Figures 3 and 6 each depict a step in which "the packet is ***processed for modifying the queuing priority*** associated with the packet" *before* distributing the packet from the ingress node/switch. *Id.* at 9:50–51, 13:48–49, Fig. 3 (steps 310, 312), Fig. 6 (steps 612, 614). WSOU argues that this term requires no construction for four reasons, all of which should be rejected. Br. 18. *First*, WSOU argues that "[t]he 'such that' clause . . . provides sufficient context for the 'processing the packets' term." *Id.* The term requires construction not because it lacks "context," but because the specification expressly limits the "present invention." Defendants' construction also is fully consistent with the "such that" clause.

Second, WSOU argues that the term should not be limited to processing at the "ingress

node" because "[c]laim 1 (written in method form) is agnostic as to whether the 'processing' is performed by an 'ingress node' in particular." *Id.* As noted above, the patent unambiguously states that the "present invention" involves performing this processing at the ingress node. The natural reading of claim 1 is entirely consistent, as it requires "determining an egress node associated with each of a plurality of packets of a traffic flow ***received at an ingress node***." That language, in combination with the whole point of the "present invention" makes clear that the processing is done at the ingress node so that the packets can be given appropriate priority as they travel through the network to the egress node.

Third, WSOU also incorrectly asserts that Defendants' construction is "inconsistent with its separate construction for 'means for processing the packets'" because Defendants' corresponding structure for the latter does not require an "ingress node." *Id.* Defendants' proposed structure for the "means for processing . . ." term is processor 210 performing certain steps. But the patent states that processor 210 ***is included within*** node 104$_A$, which operates as an ingress node: "processor 210 receives traffic (e.g., a traffic flow of packets) from network 102$_A$ via link 103$_A$." '133 patent, 5:1–2; *see also id.* at 3:65–4:3. Defendants' positions are entirely consistent.

Fourth, WSOU argues that the claims "express[] a *relative difference* in queuing priority," not "a *modification* of a given queuing priority," and without any citation, asserts "[n]othing in the remainder of the intrinsic evidence unambiguously requires . . . a *modification* limitation." Br. 18–19 (emphasis by WSOU). But as noted, the "present invention," repeatedly limits the claims to "modifying the queuing priority" and should be so construed.

     C.   **"such that packets associated with egress nodes for which the congestion condition does not exist have a different queuing priority within the load balancing network than packets associated with egress nodes for which the congestion condition exists" (Claims 1, 12, and 13)**

Defendants' Proposal	WSOU's Proposal
"such that packets are marked depending on whether they are destined for a congested egress node, such that marked packets have a different probability of being dropped"[14]	Plain and ordinary meaning

The scope of this phrase depends on the meaning of "queuing priority." The phrase requires that packets destined for congested egress nodes differ in their "queuing priority" from packets destined for uncongested egress nodes. But the claim language does not define "queueing priority," and there is no indication that it has an established meaning in the art. Thus, the scope of the term cannot be broader than the patent's description of it. *Irdeto*, 383 F.3d at 1300.

The specification makes clear that a "queuing priority" has at least two characteristics. *First*, it is indicated by marking a packet that is destined for a congested egress node. *Second*, it indicates the probability that the packet will be dropped along the way. Referring to the flowchart in Figure 3 (at step 310), the specification states that "the packet is processed for modifying *the queuing priority* associated with the packet." '133 patent, 9:51–53. It then *defines* that step 310: "*In other words*, the packet is marked for identifying the packet as a packet destined for a congested egress node." *Id.* at 9:53–55; *see also id.* at 13:48–51 (same for Fig. 6, step 612); 5:24–28 *and* 6:59–60 (describing "unprocessed" and "processed" packets as ones that are "unmarked" or "marked," respectively). It also repeatedly and consistently requires that a packet's "queuing priority" indicates the probability that the packet will be dropped. *Groove Digital, Inc. v. United Bank*, 825 F. App'x 852, 856 (Fed. Cir. 2020) ("[R]epeated and consistent description of a claim term may inform its construction."). The specification explains the probability of being dropped as the significance of the queuing priority reflected by a packet's marking. *E.g.*, '133 patent, 3:9–13, 6:54–65, 9:56–10:2, 13:56–64, 14:62–65. Shown in Figure 2, each node in the load-balancing

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[14] Defendants added the words "such that" at the beginning of their proposal so that their construction aligns with the rest of the claim language.

network includes three components that output packets to other nodes or networks (distributor 220, switch 230, and collector 240), and each includes a respective queue (queues 222, 232, and 242, respectively).   In ***nearly identical language***, the specification states that the probability that distributor 220, switch 230, and collector 240 drop packets depends on whether they are "marked": "[distributor 222/switch 230/collector 240] ***drops marked packets*** destined for congested egress nodes with ***a higher probability than*** [distributor 222/switch 230/collector 240] drops unmarked packets destined for uncongested egress nodes." *Id.* at 7:26–30, 8:15–17, 8:64–66.

WSOU's argument that Defendants seek to add unrecited concepts—"*marking packets* and *conditionally dropping* packets"—is incorrect. Br. 19 (emphasis in original). The specification inextricably links those two concepts to the notion of "queuing priority," which the specification defines to mean a marking of patents that dictates the probability a packet is dropped along the way. Both of WSOU's citations (*id.* at 19–20) are inapplicable—they merely state that a "queuing priority" may be modified. '133 patent, 5:6–10, 5:33–38.

WSOU also argues incorrectly that Defendants' construction "violat[es] the doctrine of claim differentiation." Br. 20. "Claim differentiation is not a hard and fast rule, but rather a presumption that will be overcome when the specification or prosecution history dictates a contrary construction," as is the case here. *GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1371 (Fed. Cir. 2016). WSOU first argues that "independent claim 1 is expressly differentiated from dependent claims 6−11 in that only those dependent claims (though not claim 1) expressly requir[e] marking packets." Br. 20. The Federal Circuit "has declined to apply the doctrine of claim differentiation where 'the claims are not otherwise identical in scope.'" *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1238 (Fed. Cir. 2016). Each of claims 6–11 recites various other limitations that distinguish

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them from claim 1.[15]   WSOU also argues that "while . . . independent claim 1 does not recite any limitations directed to dropping packets, claim 4 depending therefrom does."   Br. 20.   But Defendants' construction relates to the "***probability*** of being dropped," not actually "***dropping*** the packets," as recited in claim 4.   The claims are distinct.

Thus, this term should be construed according to the specification's clear and exclusive requirement that "queueing priority" be achieved through marking packets as described above.

D.   "means for determining, for each packet, whether a congestion condition exists on the egress node"[16] (Claim 12)

Defendants' Proposal	WSOU's Proposal
This term is subject to 35 U.S.C. § 112, ¶ 6	Subject to means-plus-function construction.
Function: determining, for each packet, whether a congestion condition exists on the egress node	**Function:** "determining, for each packet, whether a congestion condition exists on the egress node"
Structure: Indefinite	**Structure:** see, e.g., Figs. 1–7; 5:1–6:12; 9:8–22; 9:41–51; 13:32–47; 14:24–65; 15:12–28.

The parties agree that this term is a means-plus-function term and agree on its function. The only dispute is whether, as Section 112, ¶ 6 requires, the specification discloses corresponding structure that performs the recited function.   But the only corresponding device that the specification identifies is a general purpose microprocessor, *without* the requisite algorithm used to perform that function on the microprocessor. Thus, claim 12 is indefinite. *WMS Gaming Inc.*

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[15] '133 patent, 17:4–6 (cl. 6) ("allowing pass-through of packet . . ."), 17:8–14 (cl. 7) ("splitting the traffic flow . . ."/"distributing the traffic flow parts . . ."), 17:24–27 (cl. 8) ("conveying the traffic . . ."), 17:34–45 (cl. 9) ("distributing said traffic . . ."/"receiving first received traffic . . ."), 17:51–62 (cl. 10) ("distributing second transmitted traffic . . ."/"receiving second received traffic . . ."), 18:1–7 (cl. 11) ("splitting the traffic flow . . ."/"distributing the traffic flow parts . . .").

[16] WSOU briefed the ***wrong*** "means for determining" term. In the narrowed list of terms for construction, Defendants identified "means for determining, for each packet, whether a congestion condition exists on the egress node." Ex. 5 (2/8/21 email) at 1; Ex. 6 (Attachment to 2/8/21 email) at 1. WSOU did not object. Ex. 8 (2/10/21 email). Yet, WSOU instead briefed "means for determining an egress node associated with each of a plurality of packets . . . ." Br. 20–21.

v. Int'l Game Tech., 184 F.3d 1339, 1349 (Fed. Cir. 1999); *Dyfan, LLC v. Target Corp.*, No. W-19-CV-00179-ADA, 2020 WL 8617821, at *6 (W.D. Tex. Nov. 24, 2020) ("Because § 112, ¶ 6 applies and the corresponding structure is a special-purpose computer function, the specification must provide an algorithm for the software function.").

The specification describes the recited function with step 308 of the flowchart in Figure 3, and states that "the congestion status of the egress node associated with a packet is determined from a *processor module* of the ingress node (illustratively, processor 210 of Figure 2)." '133 patent, 9:41–47. But the "processor module" or processor 210 is nothing more than a *general purpose microprocessor*. *E.g.*, *id.* at 14:15–16 (describing a "CPU" as an example of "processor element 702"), 14:24–28 ("It should be noted that the present invention may be implemented in software and/or in a combination of software and hardware, e.g., using application specific integrated circuits (ASIC), a *general purpose computer* or any other hardware equivalents."). Nor can an "ASIC" be the corresponding structure. Aside from this generic description, the specification does not describe such an ASIC at all—it is nothing more than a black box.

The specification fails to disclose an algorithm for "determining, for each packet, whether a congestion condition exists on the egress node." Indeed, the specification fails to disclose an algorithm for determining whether a congestion condition exists *anywhere*—on an egress node or otherwise. At most, the specification states that (1) the congestion condition information is "*indicative* of a queue overflow condition (or any other queue utilization condition)" and (2) that a congestion condition is "*indicative* of a hose constraint violation associated with the load-balancing node." *Id.* at 5:53–64. The specification does not state that the congestion condition information is determined based on the detection of either of those conditions, let alone how (black box) processor 210 determines either condition. This term therefore is indefinite.

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E.   **"means for processing the packets such that packets associated with egress nodes for which the congestion condition does not exist have a different queuing priority within the load-balancing network than packets associated with egress nodes for which the congestion condition exists" (Claim 12)**

Defendants' Proposal	WSOU's Proposal
This term is subject to 35 U.S.C. § 112, ¶ 6. **Function:** processing the packets such that packets associated with egress nodes for which the congestion condition does not exist have a different queuing priority within the load-balancing network than packets associated with egress nodes for which the congestion condition exists **Structure:** processor 210 which marks the packets such that marked packets have a different probability of being dropped than unmarked packets	Subject to means-plus-function construction. **Function:** "processing the packets such that packets associated with egress nodes for which the congestion condition does not exist have a different queuing priority within the load-balancing network than packets associated with egress nodes for which the congestion condition exists" **Structure:** processor having the claimed functionality

The parties agree that Section 112, ¶ 6 applies to this term, on the recited function, and that the corresponding structure includes a "processor." Br. 22. The specification, however, makes clear that the "processor" is a ***general-purpose processor*** programmed to carry out functions. *See, e.g.*, '133 patent, 14:15–16, 14:28–35. Thus, "the specification . . . must contain an algorithm to perform the function associated with the ['means for processing'] limitation, or the limitation is indefinite." *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1305 (Fed. Cir. 2012). This rule has been undisturbed for the last 20 years. *See, e.g.*, *Nevro Corp. v. Bos. Sci. Corp.*, 955 F.3d 35, 42 (Fed. Cir. 2020); *WMS Gaming*, 184 F.3d at 1349; *Rain Computing*, 2021 WL 786361, at *4; *Dyfan*, 2020 WL 8617821, at *6.

Nevertheless, WSOU, relying on *Acromed Corp. v. Sofamor Danek Grp., Inc.*, 253 F.3d 1371 (Fed. Cir. 2001), asserts that this term should not be limited to ***any*** algorithm(s) for carrying out the claimed function, arguing instead that the structure is merely a "processor having the claimed functionality." Br. 22. But that case had nothing to do with computers as the

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corresponding structure. *Acromed* dealt with a bone screw as corresponding structure, and is thus inapposite. *Acromed*, 253 F.3d. at 1382. Contrary to WSOU's argument, the "means for processing" here must be limited to the one algorithm disclosed in the patent.

The only algorithm that the patent describes to perform the claimed function is marking packets such that they have a different probability of being dropped than unmarked packets. The patent states that packets destined for a congested egress node are "processed for modifying the queuing priority associated with the packet." '133 patent, 9:51–53. "In other words, the packet is marked for identifying the packet as a packet destined for a congested egress node." *Id.* at 9:53–55. As discussed above, the patent consistently states that marked packets are dropped with higher probability than unmarked packets. *Id.* at 6:54–65, 7:26–30, 8:15–25, 8:64–9:7, 9:56–10:2. Thus, this term should be limited to the purported algorithm disclosed in the specification.

IV.   U.S. Patent No. 7,636,309 (Case No. -485)

The '309 patent relates to splitting traffic flows onto multiple paths of a network. '309 patent, 3:5–8. A "traffic flow" "refers to a group (e.g., two or more) of packets that are to be routed in [a] network." *Id.* at 2:63–65. A "path" "refers to a set of two or more nodes and one or more links between the nodes." *Id.* at 1:67–3:4. Figure 1B (annotated) explains the claimed invention:

FIG. 1B
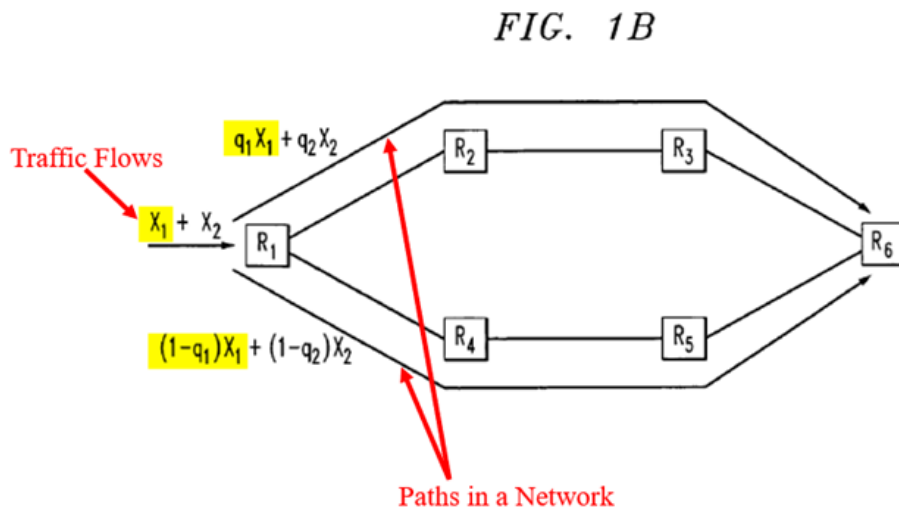
As shown, X_1 and X_2 represent traffic flows that are to be split onto one of the paths (e.g., the upper path or the lower path). *Id.* at 4:9–12, 4:15–19. Each traffic flow is split "based on a given split ratio vector." *Id.* at 4:15–19. For traffic flow X_1, the "split ratio vector" is represented as "q_1" and "1-q_1." *Id.* For example, if q_1 were 0.4, then 40% of the X_1 traffic would go on the upper path and 60% of the X_1 traffic (*i.e.*, 1 – 0.4) would go on the lower path. The claims recite that, after the traffic flows are split into "sub-flows," combined sub-flows from at least two traffic flows (X_1 and X_2) are routed onto one path. *Id.* at 15:38–45.

A.   "split ratio vector" (Claims 1, 11, and 16)

Defendants' Proposal	WSOU's Proposal
"the proportion of the flow routed in each path"	"the proportion of the flow routed in a given path relative to the cumulative flows on the plurality of paths"

The '309 patent expressly defines "split ratio vector": "[A] ***split ratio vector*** of a flow ***is defined as*** the proportion of the flow routed in each path." '309 patent, 3:48–49. A "specification acts as a dictionary when it expressly defines terms" in this manner. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005). In those circumstances, "there is no need to search further for the meaning of the term," and "that definition shall apply." *See Advanced Fiber Techs. v. J & L Fiber Servs., Inc.*, 674 F.3d 1365, 1372 (Fed. Cir. 2012); *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 1333 F.3d 1473, 1478 (Fed. Cir. 1998). This definition of the term is entirely consistent with the term's use in the claims. *See, e.g.*, '309 patent, 15:1–56, 16:11–56, 17:11–18:20, Figs. 1, 2.

WSOU *agrees* that Defendants' construction is taken from the "specification verbatim." Br. 24. WSOU nevertheless advances the strawman argument that the express definition "could be interpreted as requiring that *each* path must route the *same* proportion of the flow." *Id.*

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Defendants' construction does no such thing, nor will Defendants argue that it does. WSOU's new[17] proposal should be rejected and the express definition of the claim term should be adopted.

V. U.S. Patent No. 9,164,800 (Case No. -481)

The '800 patent addresses using algorithms to match "compute nodes" (such as virtual machines) to geographically distributed "data nodes." '800 patent, 1:30–32. Data nodes sometimes will not be "local to the compute nodes processing the data," and thus "issues such as propagation delay and bandwidth may further impact the communication latency between data nodes and compute nodes or between multiple computer nodes cooperating to perform a processing task." Id. at 1:33–41. Figure 2 (annotated) illustrates an "assignment problem for solution," labeling compute nodes with a "C" and data nodes with a "D." Id. at 6:30–47.
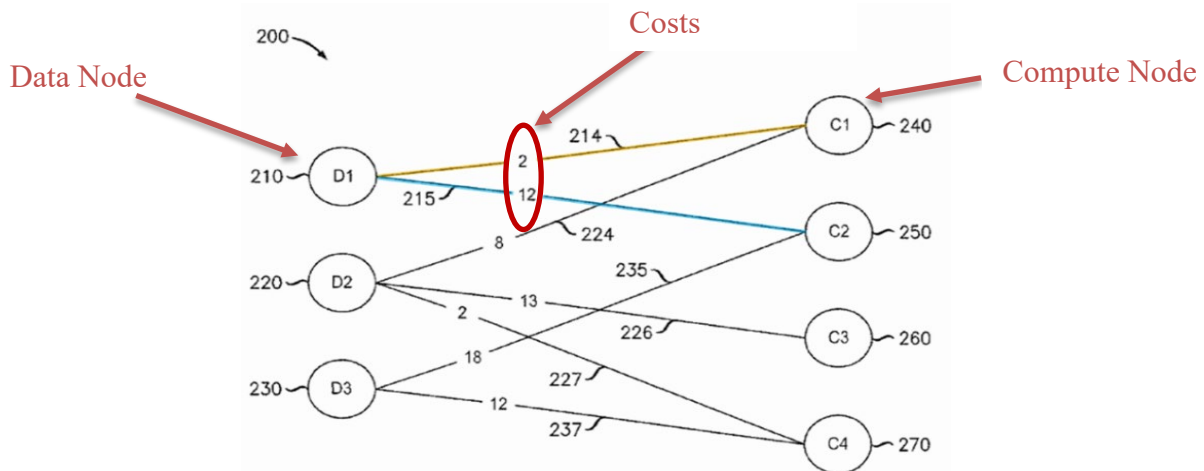

FIG. 2

As shown above, the lines between the nodes are "edges," which are "[p]ossible assignments between the data nodes . . . and the compute nodes" and "may be associated with a cost representing, for example, a latency or network distance between the two nodes." Id. at 2:2–3, 6:49–54. For example, "the cost of assigning compute node 240 to data node 210 may be

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represented as '2'" (**orange**), and "the cost of assigning compute node 250 to the same data node may be represented as '12'" (**teal**). *Id.* at 6:57–60. Thus, all else equal, a solution with compute node 240 assigned to data node 210 (cost of 2) is preferable to a solution with compute node 250 assigned to data node 210 (cost of 12).

A.   "latency cost" (Claims 1, 13)

Defendants' Proposal	WSOU's Proposal
"communication delay between a compute node and a data node"	Plain and ordinary meaning

WSOU does not dispute that "latency" refers to a communication delay. Br. 25–26. Indeed, through its repeated, consistent, and exclusive disclosure, the specification defines "latency" as communication delay. *Groove Digital*, 825 F. App'x at 856. *See, e.g.*, '800 patent, 6:3–6; 6:23–27; 1:32–34; 1:37–41; 4:38–43; 5:49–48; 6:52–54. The only dispute is thus whether the *claimed* latency cost refers to communication delay between *any* two nodes, or just between a compute node and a data node. The claims and specification compel the latter.

The language of claims 1 and 13 requires that "latency cost" refers to the communication delay between a compute node and a data node. Claim 1 recites a method "for assigning compute nodes to data nodes," that includes "obtaining . . . a set of *edges between compute nodes and data nodes*." The assignment must be based on "the assignment objective and a plurality of *costs associated with the set of edges*." *Id.* at 15:31–34. Claim 13 recites nearly identical language for a "cloud controller." *Id.* at 17:24–26. As such, the claims unambiguously require that the "costs" on which the assignment is based are costs associated with the "edges between compute nodes and data nodes." The term "latency cost" in this context can only refer to delays between such nodes.

The specification similarly describes assignments as limited to those between compute nodes and data nodes. *See, e.g.*, *id.* at 6:30–31 ("optimizing assignment of *compute nodes* to *data nodes*"), 6:49–50 ("[p]ossible assignments between the *data nodes* . . . and the *compute nodes*"),

6:57–58 ("the cost of assigning *compute node* 240 to *data node* 210"), 7:10–13 ("determining an optimum assignment of *compute nodes to data nodes*"), 7:51–52 ("[v]arious additional or alternative objectives for *compute-node-to-data-node* assignment"), 7:55–58 ("determin[ation of] how a set of *compute nodes* should be assigned to a set of *data nodes*"). It discloses only using the latency cost between the compute node and data node in making the assignment. *See, e.g.*, *id.* at 11:24–26 ("[A] cloud controller may, in assigning *compute nodes to data nodes*, optimize the latencies *between such nodes* according to various objectives."). It thus supports only the conclusion that the claimed latency costs refer to the delays between compute and data nodes.

WSOU argues incorrectly that this term should not be restricted to a communication delay between a compute node and a data node, but is broad enough to encompass "any sort of delay between other nodes." Br. 25. According to WSOU, the patent "contemplates" communication between compute nodes. *Id.* (citing '800 patent at 1:37–41, 8:10–12, 11:24–29). But as noted above, the requirement that the communication delay be between compute and data nodes is rooted in the claims' requirement that the "latency cost" be "used in obtaining a set of *assignments*," which the claims and specification exclusively describe as being between compute and data nodes. None of the passages WSOU cites describes using any communication delay that may exist *between compute nodes* in making an assignment *between a compute node and a data node*. The first passage (1:37–41) does not say anything about assignments at all. The second passage (8:10–12) describes assignments between one data node and two compute nodes, but says nothing about using communication delays between compute nodes to do so. Finally, although the third passage (11:24–29) states that "compute nodes may . . . communicate with each other" and describes "inter-compute node latencies," it never describes assigning a compute node to another compute node.

Thus, because the specification defines "latency cost" as "communication delay" between

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nodes (which WSOU does not dispute), and because the claims require that the "latency cost" must

be between compute and data nodes, the term should be construed as Defendants propose.

B.   "[determining/determine] an assignment objective" (Claims 1, 13)

Defendants' Proposal	WSOU's Proposal
"select[ing] one of a plurality of assignment objectives"	Plain and ordinary meaning

This term should be construed to require selecting from multiple possible assignment

objectives based on the clear and unmistakable arguments made during prosecution. WSOU does

not dispute that the applicants distinguished prior art based on this limitation during prosecution.

Br. 27. Defendants' construction gives effect to that distinction, whereas WSOU seeks to ignore

it so that WSOU can impermissibly encompass scope that the applicants explicitly surrendered.

During prosecution, the applicants successfully distinguished the "Palanisamy" reference

as disclosing a single assignment objective, stating that it does not "disclos[e] . . . a separate step

of *determining an assignment objective*," because it "always follows *the same approach* to VM

assignment," and thus "[t]here is no opportunity to determine *which assignment objective* is to be

achieved and apply that algorithm associated with the *selected objective* because the single

approach appears to be *hard-coded into the system*." Ex. 10 at 15. Effectuating this disclaimer,

Defendants' construction requires selection among "a plurality of assignment objectives," thereby

properly excluding systems always following "the same approach . . . hard-coded into the system."

N. Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1345 (Fed. Cir. 2005) ("[T]he

applicant *distinguished* his invention from the Dechenne patent on the basis of the latter disclosing

inner walls that are 'slightly concave.' The *inescapable consequence* of such an argument is that

the scope of applicant's claims cannot cover inner walls that are 'slightly concave.'").

WSOU concedes that the claims cannot cover systems that utilize a single assignment

objective hard-coded into the system, acknowledging that "the claim language was distinguished

from a single approach hard-coded in the system." Br. 27. WSOU nevertheless asserts that Defendants' construction should be rejected for three reasons, each of which should be rejected.

First, WSOU argues that the applicants' express disavowal does not "unambiguously disclaim all of the several disclosed embodiments save the one which enables a client or operator to select one of a plurality of assignment objectives." *Id.* But Defendants' construction is agnostic as to **what** selects the objective so long as it **is selected** from the plurality of objectives. Thus, Defendants' construction properly excludes only single-objective systems. And WSOU identifies no embodiment that would be improperly excluded by Defendants' construction.

Second, WSOU argues that Defendants' construction "introduce[es] the extraneous requirement 'one of a plurality of assignment objectives'" and that "the claim language specifies that only the determined assignment objective (in the singular) need be based on a latency cost used in obtaining a set of assignments by applying an algorithm." *Id.* at 27–28. The requirement that the objective be selected from a plurality of assignment objectives is based on the undisputed file history disclaimer discussed above. Defendants' construction does not require that **all** of the assignment objectives must be based on a latency cost. WSOU's strawman should be rejected.

Third, WSOU argues that "not every preferred embodiment necessarily requires that the determining of an assignment objective must involve selecting one of a plurality of assignment objectives." *Id.* at 26–27. The patent describes an "example" in which the cloud controller "may only provide a single objective." '800 patent, 8:31–34. But it is that very approach—*i.e.*, node assignment based on a "single approach . . . hard-coded into the system"—that the applicants expressly disclaimed. In other words, the applicants surrendered that single embodiment to obtain the claims. This term therefore is properly construed as excluding the "single objective" example. *See, e.g.*, *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1372–73 (Fed. Cir. 2005).

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CERTIFICATE OF SERVICE

The undersigned certifies that on March 17, 2021, all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document through the Court's CM/ECF system under Local Rule CV-5(b)(1).

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